FIG. 1

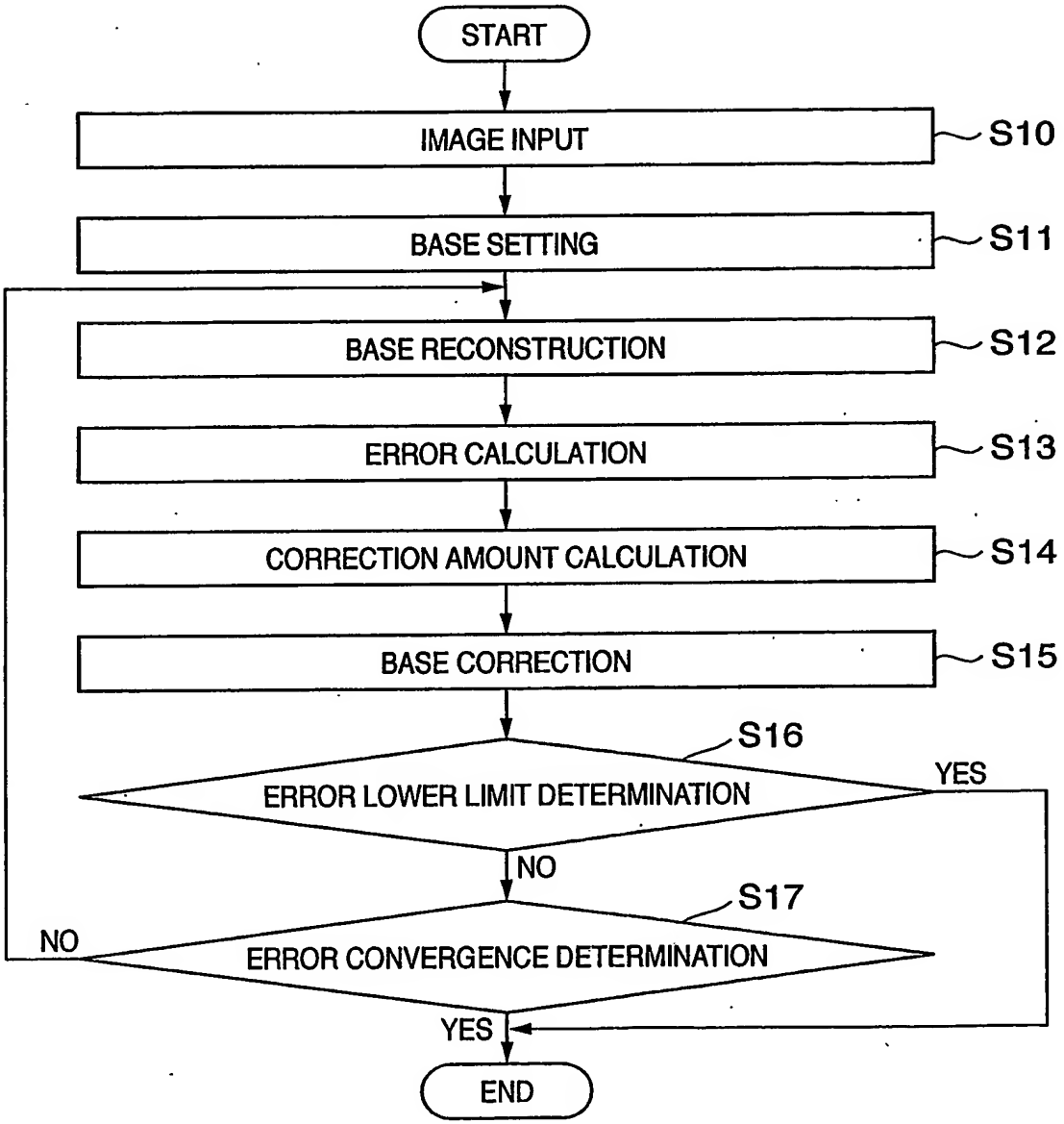
START
IMAGE INPUT
S10
BASE SETTING
S11
BASE RECONSTRUCTION
S12
ERROR CALCULATION
S13
CORRECTION AMOUNT CALCULATION
S14
BASE CORRECTION
S15
S16
ERROR LOWER LIMIT DETERMINATION
YES
NO
S17
NO
ERROR CONVERGENCE DETERMINATION
YES
END

FIG. 2

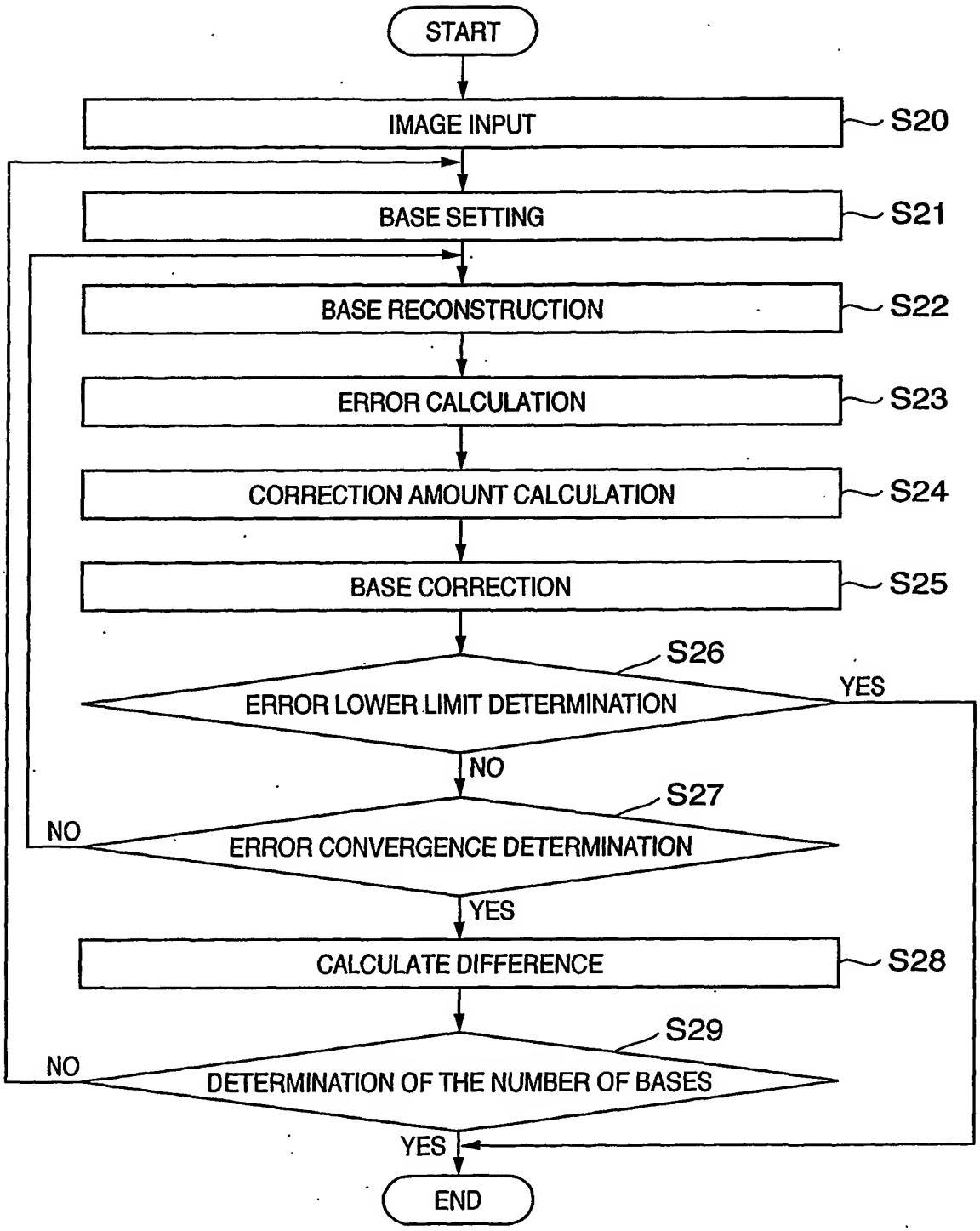
START
IMAGE INPUT
S20
BASE SETTING
S21
BASE RECONSTRUCTION
S22
ERROR CALCULATION
S23
CORRECTION AMOUNT CALCULATION
S24
BASE CORRECTION
S25
S26
ERROR LOWER LIMIT DETERMINATION
YES
NO
S27
NO
ERROR CONVERGENCE DETERMINATION
YES
CALCULATE DIFFERENCE
S28
S29
NO
DETERMINATION OF THE NUMBER OF BASES
YES
END

FIG. 3

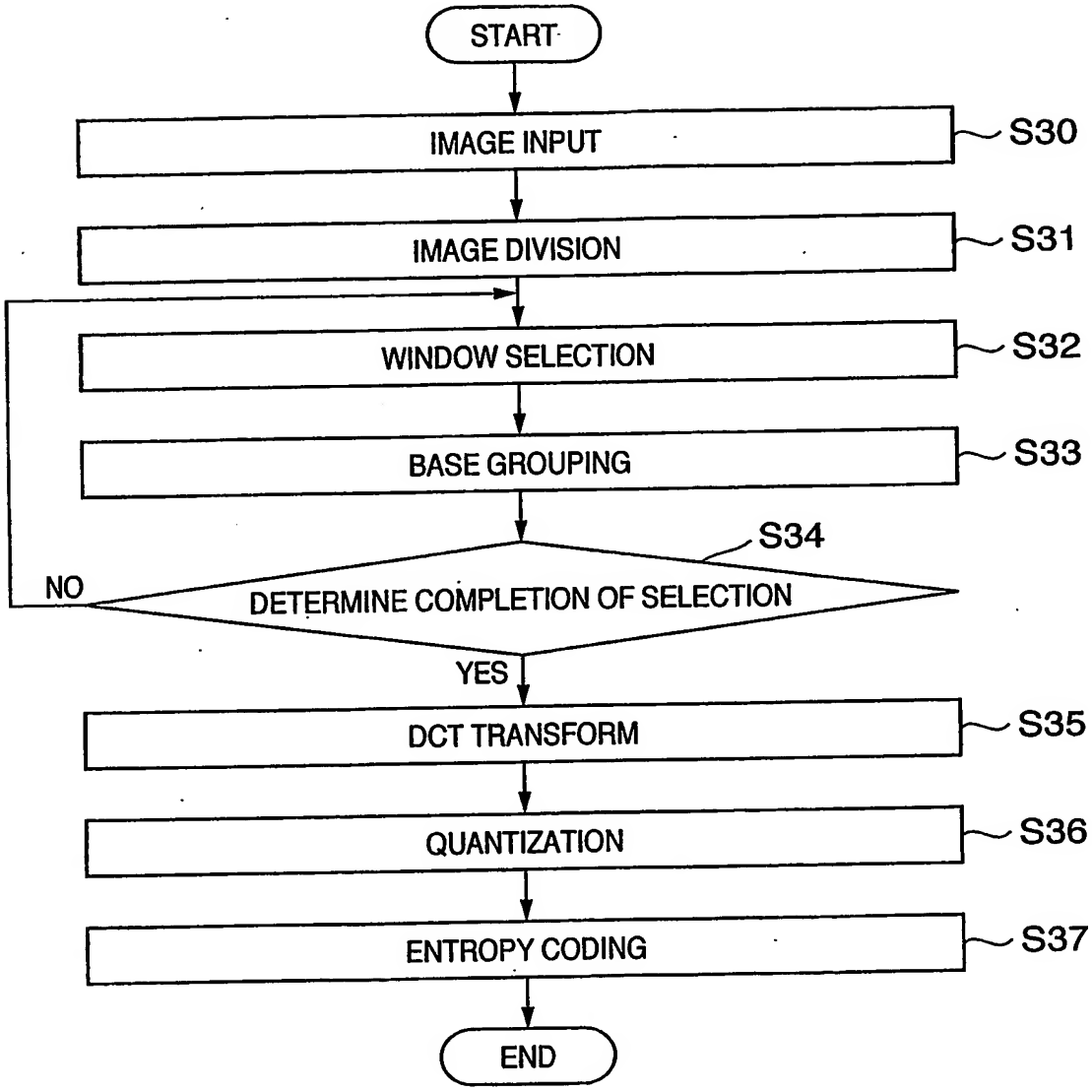
START
IMAGE INPUT
S30
IMAGE DIVISION
S31
WINDOW SELECTION
S32
BASE GROUPING
S33
S34
NO
DETERMINE COMPLETION OF SELECTION
YES
DCT TRANSFORM
S35
QUANTIZATION
S36
ENTROPY CODING
S37
END

FIG. 4

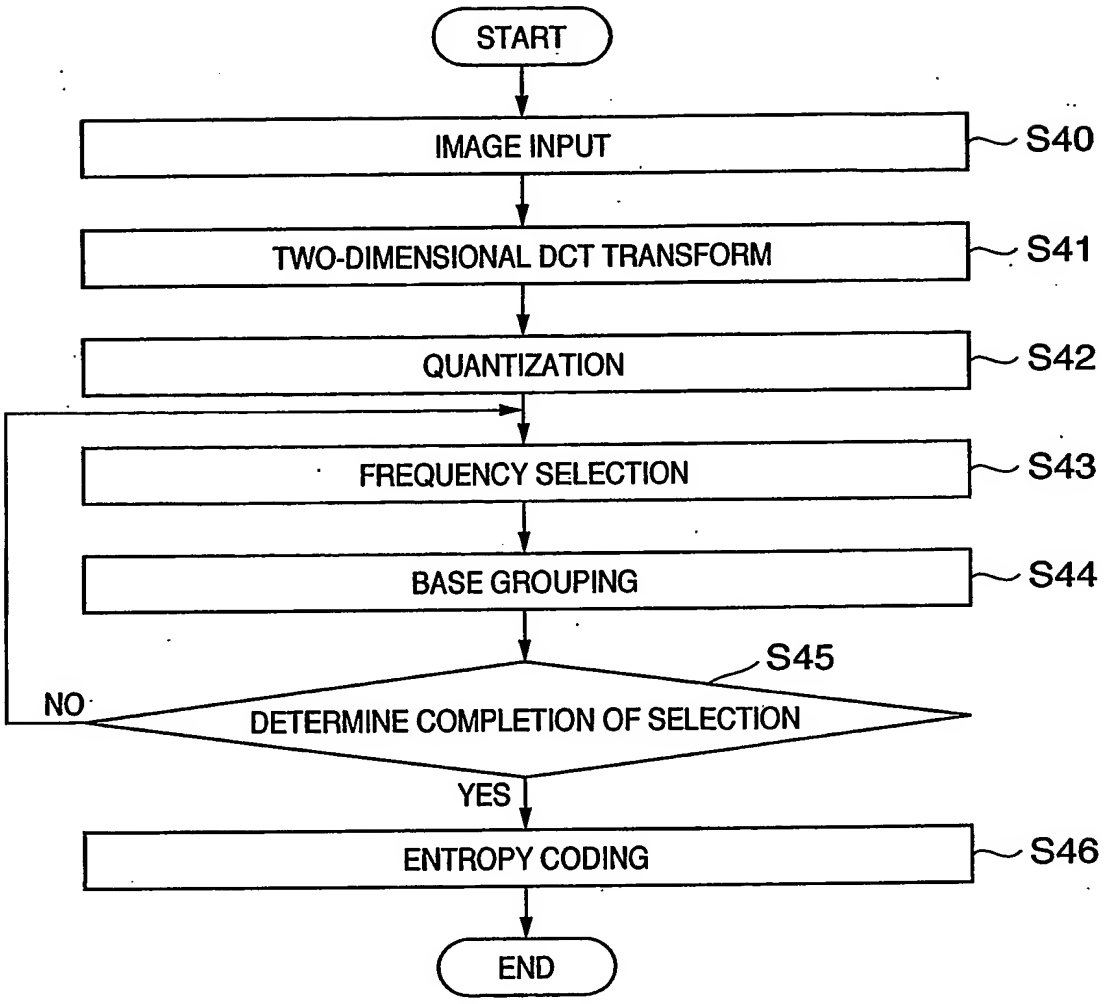
START
IMAGE INPUT
S40
TWO-DIMENSIONAL DCT TRANSFORM
S41
QUANTIZATION
S42
FREQUENCY SELECTION
S43
BASE GROUPING
S44
S45
NO
DETERMINE COMPLETION OF SELECTION
YES
ENTROPY CODING
S46
END

FIG. 5

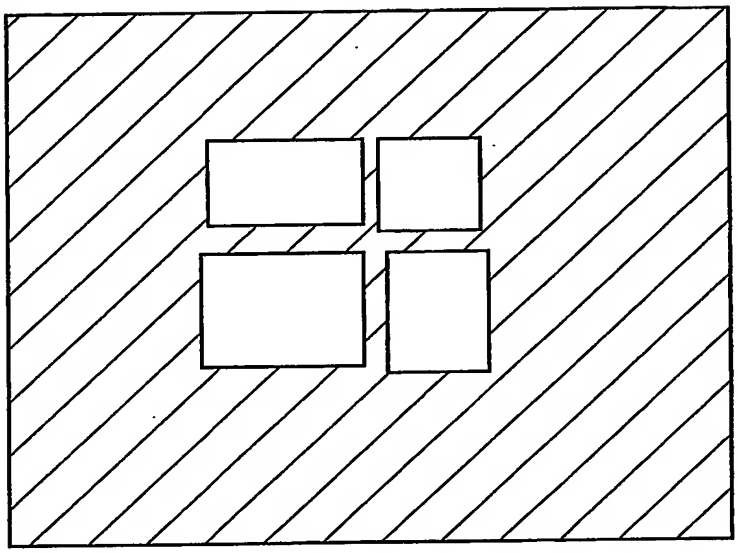

FIG. 6

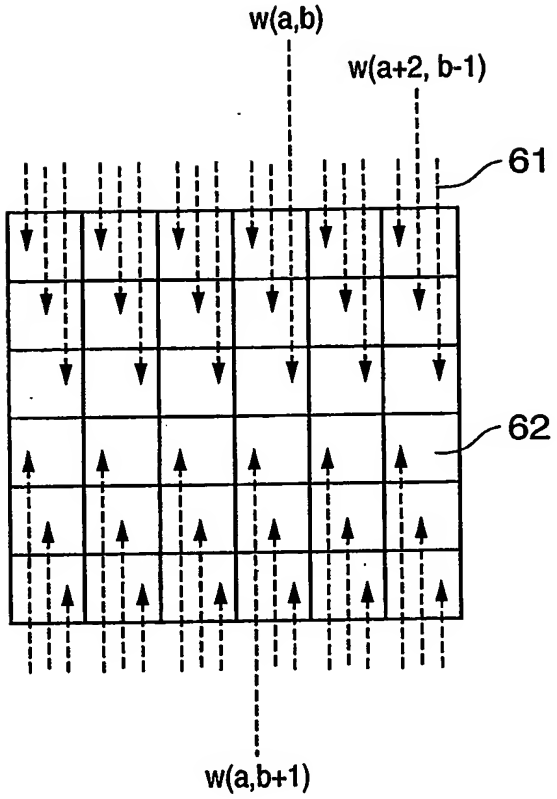

FIG. 7

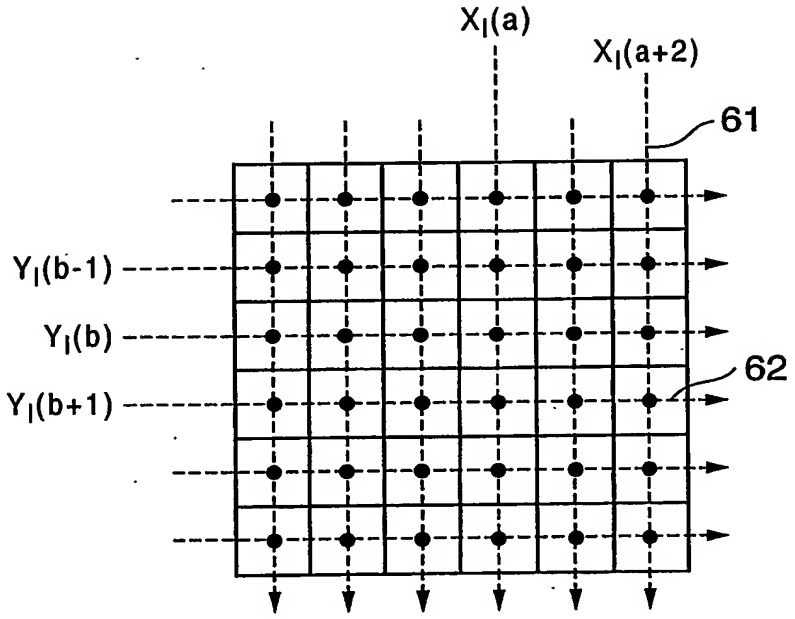

FIG. 8

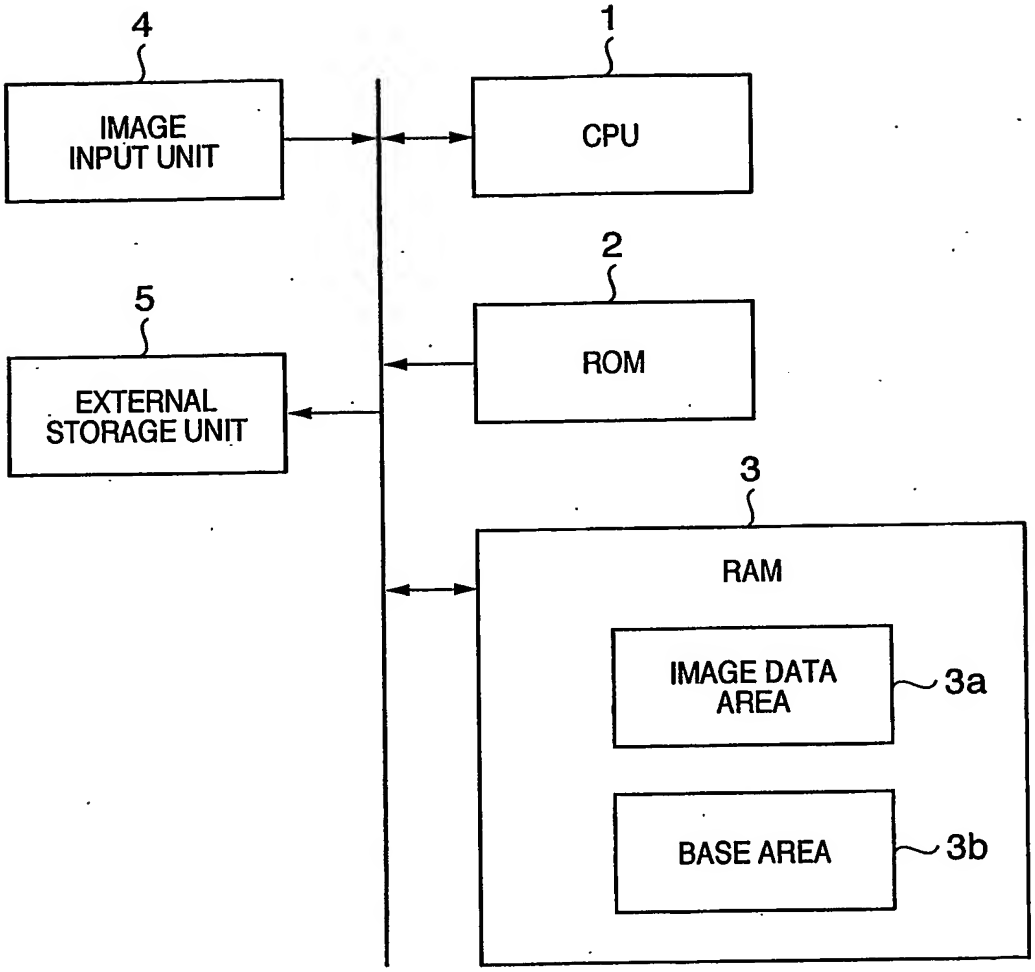
4
IMAGE INPUT UNIT
1
CPU
2
ROM
5
EXTERNAL STORAGE UNIT
3
RAM
IMAGE DATA AREA
3a
BASE AREA
3b

FIG. 9

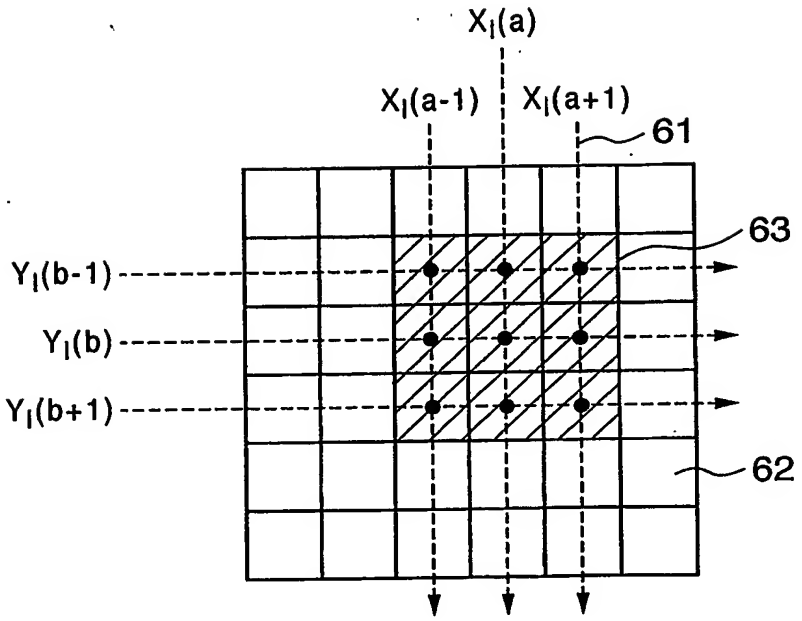

FIG. 10

$f(x,y)$										
136	79	28	76	109	37	46	92			
141	79	38	122	117	64	46	78			
140	104	40	101	122	83	45	54			
143	102	33	69	109	109	44	54			
165	135	117	115	124	132	106	41			
167	163	162	163	149	144	134	53			
173	170	169	172	171	169	153	93			
174	174	176	174	169	155	147	127			

FIG. 11

$X_1(x)_{(t=0)}$	0.1	0	0	0	0	0	0	0
$Y_1(y)_{(t=0)}$	0	0	0	0	0	0	0	0

FIG. 12

$\tilde{f}_1(x,y)_{(t=0)}=X_1(x)_{(t=0)} \cdot Y_1(y)_{(t=0)}$

0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

FIG. 13

$\Delta X_0(x)_{(t=1)}$	0	0	0	0	0	0	0	0	0
$\Delta Y_0(y)_{(t=1)}$	0.0106	0.011	0.0109	0.0112	0.0129	0.0135	0.0135	0.0135	0.0136

FIG. 14

$X_0(x)_{(t=1)}$	0.1	0	0	0	0	0	0	0
$Y_0(y)_{(t=1)}$	0.0106	0.011	0.0109	0.0112	0.0129	0.0135	0.0135	0.0136

FIG. 15

$\Delta X_0(x)_{(t=2)}$	0.0118	0.0098	0.0077	0.0096	0.0103	0.0087	0.0072	0.0057
$\Delta Y_0(y)_{(t=2)}$	0.0193	0.0205	0.0204	0.0206	0.0248	0.0264	0.0279	0.0281

FIG. 16

$\Delta X_0(x)_{(t=9)}$	6.0845	5.228	4.3387	5.16	5.3904	4.7233	3.9623	2.9586
$\Delta Y_0(y)_{(t=9)}$	4.3238	4.9659	5.0631	4.8601	6.7611	8.1312	8.9774	9.076

FIG. 17

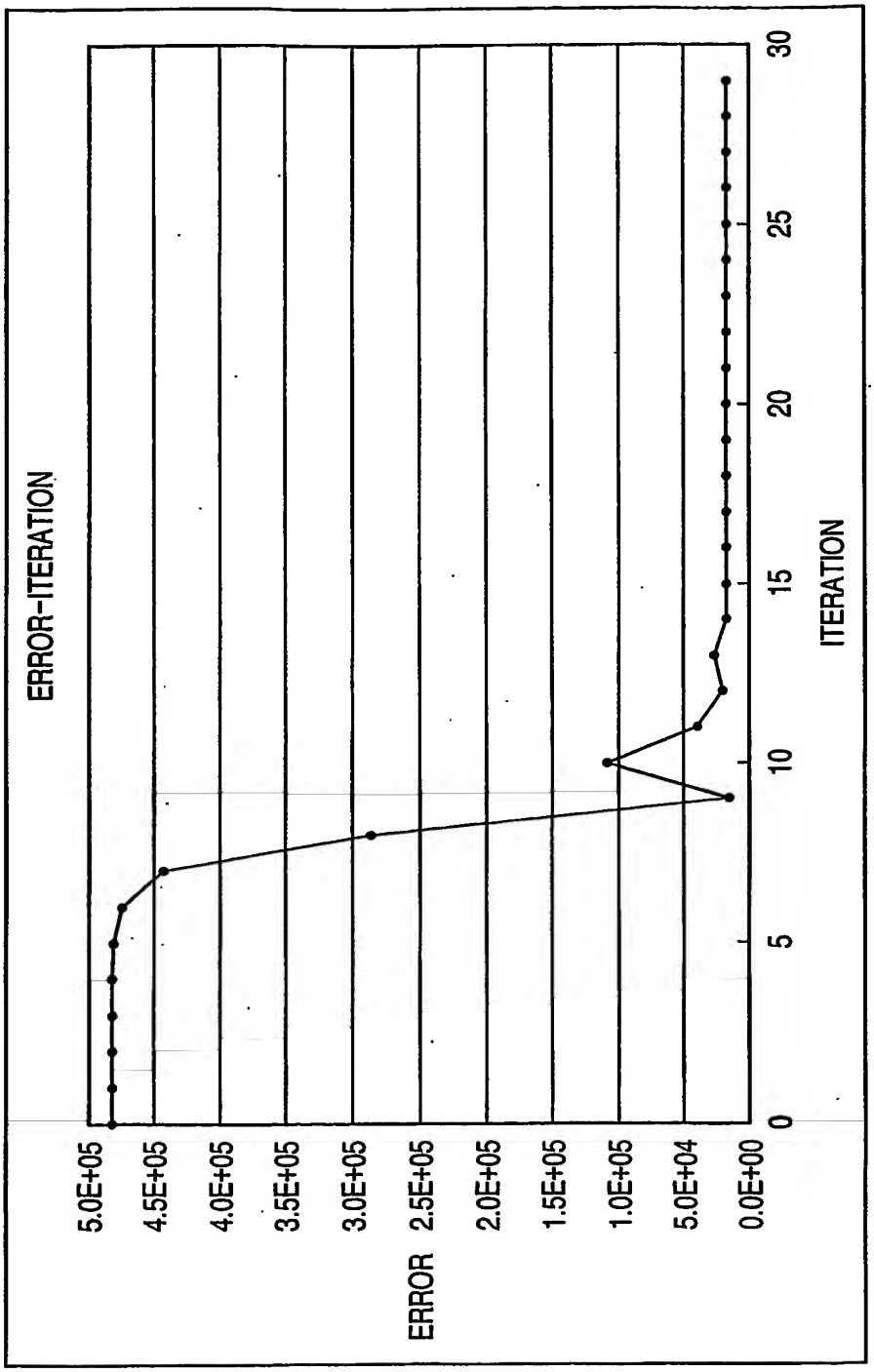
ERROR-ITERATION
ERROR
5.0E+05
4.5E+05
4.0E+05
3.5E+05
3.0E+05
2.5E+05
2.0E+05
1.5E+05
1.0E+05
5.0E+04
0.0E+00
0
5
10
15
20
25
30
ITERATION

FIG. 18

$X_0(x)_{(t\to\infty)}$	9.3141	7.9686	6.6163	7.8649	8.2146	7.2	6.0413	4.5084
$Y_0(y)_{(t\to\infty)}$	10.494	12.0484	12.2836	11.7937	16.4004	19.7151	21.7626	22.0012

FIG. 19

$\tilde{f}_0(x,y)_{(t\to\infty)}=X_0(x)_{(t\to\infty)}\cdot Y_0(y)_{(t\to\infty)}$

97.7422	83.6225	69.4315	82.5343	86.204	75.5568	63.3974	47.3111
112.22	96.0089	79.7158	94.7595	98.9728	86.7485	72.788	54.319
114.4107	97.8831	81.272	96.6093	100.9049	88.4419	74.2089	55.3794
109.8477	93.9793	78.0307	92.7563	96.8805	84.9146	71.2493	53.1707
152.755	130.6882	108.51	128.9875	134.7227	118.0829	99.0797	73.9396
183.6284	157.1017	130.441	155.0573	161.9517	141.9487	119.1048	88.8836
202.699	173.4175	143.9879	171.1607	178.7711	156.6907	131.4744	98.1145
204.9214	175.3188	145.5665	173.0372	180.7311	158.4086	132.9158	99.1902

FIG. 20

$f_1(x,y)=f(x,y)-\bar{f}_0(x,y)_{(t\to\infty)}$

38.2578	-4.6225	-41.4315	-6.5343	22.796	-38.5568	-17.3974	44.6889
28.78	-17.0089	-41.7158	27.2405	18.0272	-22.7485	-26.788	23.681
25.5893	6.1169	-41.272	4.3907	21.0951	-5.4419	-29.2089	-1.3794
33.1523	8.0207	-45.0307	-23.7563	12.1195	24.0854	-27.2493	0.8293
12.245	4.3118	8.49	-13.9875	-10.7227	13.9171	6.9203	-32.9396
-16.6284	5.8983	31.559	7.9427	-12.9517	2.0513	14.8952	-35.8836
-29.699	-3.4175	25.0121	0.8393	-7.7711	12.3093	21.5256	-5.1145
-30.9214	-1.3188	30.4335	0.9628	-11.7311	-3.4086	14.0842	27.8098

FIG. 21

$\Delta X_1(x)_{(t=1)}$	0	0	0	0	0	0	0	0	0
$\Delta Y_1(y)_{(t=1)}$	0.003	0.0022	0.002	0.0026	0.001	-0.0013	-0.0023	-0.0024	

FIG. 22

$\Delta X_1(x)_{(t=2)}$	0.0004	-8.9691	-0.0005	-3.0473	0.0002	-9.7318	-0.0003	0.0001
$\Delta Y_1(y)_{(t=2)}$	0.0042	0.0031	0.0028	0.0037	0.0013	-0.0018	-0.0033	-0.0034

FIG. 23

$X_0(x)_{(t\to\infty)}$	9.314059	7.968558	6.616251	7.864916	8.214631	7.200042	6.041299	4.508398
$Y_0(y)_{(t\to\infty)}$	10.49404	12.04839	12.28356	11.79374	16.4004	19.71507	21.76265	22.00115
$X_1(x)_{(t\to\infty)}$	5.855984	-0.47626	-7.69964	0.047947	3.368921	-2.28737	-4.5027	3.50781
$Y_1(y)_{(t\to\infty)}$	6.61005	5.70475	4.722223	4.527204	-1.47624	-4.08533	-3.73539	-2.88403
$X_2(x)_{(t\to\infty)}$	2.526245	1.695333	-1.70869	-2.36103	-0.26453	4.25259	-1.22741	-6.25392
$Y_2(y)_{(t\to\infty)}$	-3.30739	-2.16792	1.972279	4.676515	4.133266	1.484439	-0.85693	-4.40687
$X_3(x)_{(t\to\infty)}$	0.619973	-1.05835	0.174089	4.68368	0.360208	-2.66006	-0.4968	-3.57879
$Y_3(y)_{(t\to\infty)}$	-1.13664	3.46946	1.470049	-3.5713	0.287339	3.133781	-0.78771	-2.50734

$$f_{decode}(x,y)=\sum_{n=0}^{3}[X_n(x)_{(t\to\infty)}\cdot Y_n(y)_{(t\to\infty)}]$$

127.3904	76.07	23.9896	85.3368	108.9388	49.3964	38.2588	95.2501
142.3006	85.9441	40.0989	116.4015	120.0151	55.2518	48.0385	75.4716
147.9569	97.4211	41.7976	99.0642	116.8215	82.1176	49.7948	54.3438
145.9587	103.5309	34.5601	65.2056	109.6095	103.9472	46.8991	52.5858
154.7292	138.0938	112.8633	120.504	128.76	138.273	100.5108	41.8837
165.3966	158.2463	159.9045	166.0343	148.925	149.2706	134.1207	54.0541
178.171	174.5768	174.0754	169.3161	166.1308	163.6874	149.7371	93.1899
175.3439	171.8735	174.8646	171.5601	171.2779	152.9351	152.5561	125.6068

FIG. 24

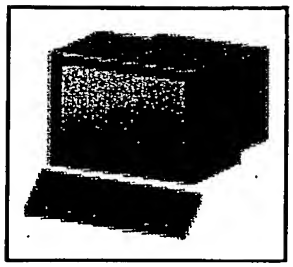

FIG. 25

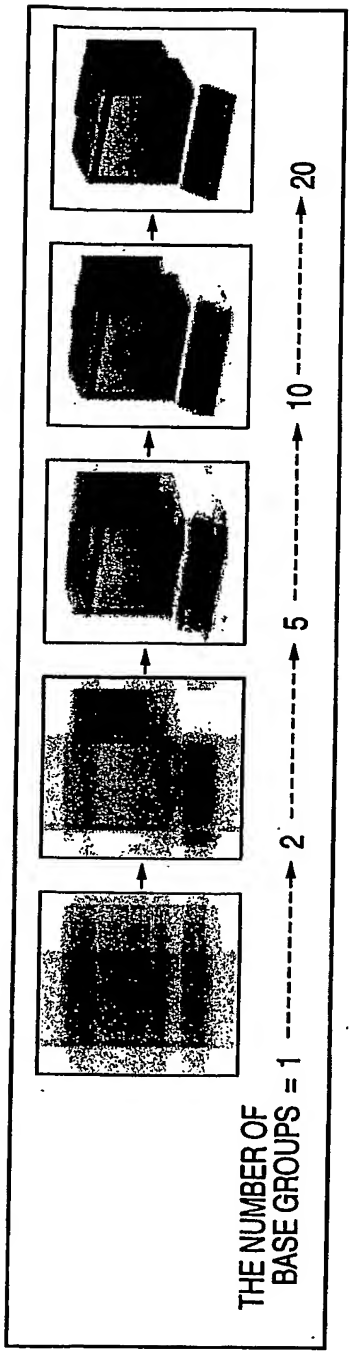

FIG. 25

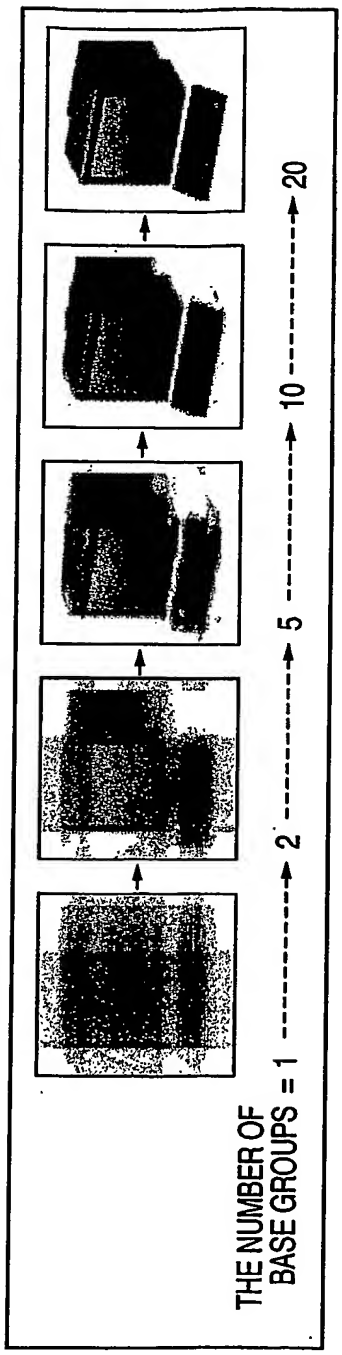

FIG. 26

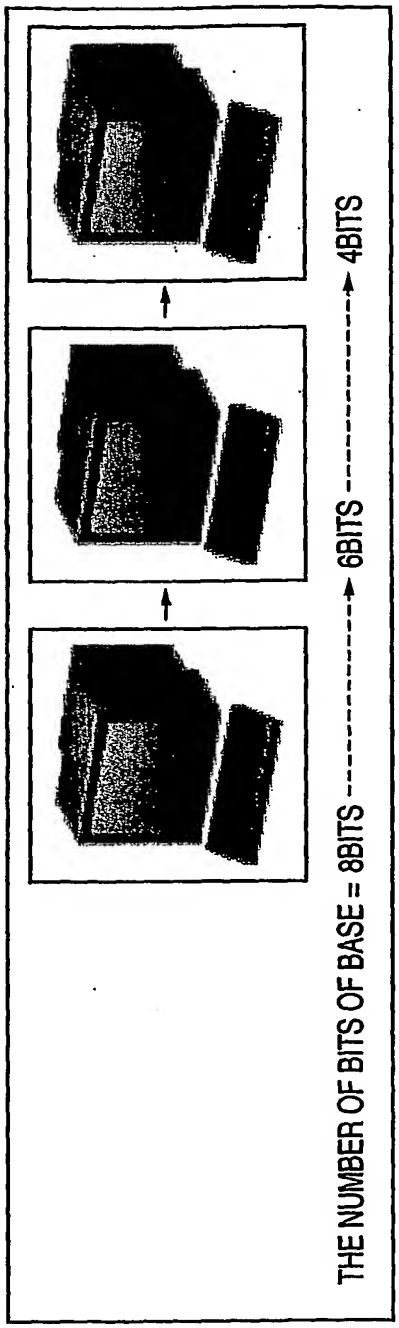

FIG. 27

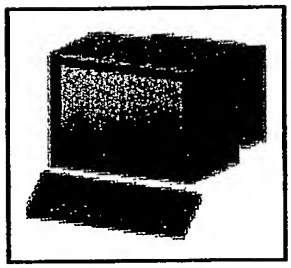

FIG. 28

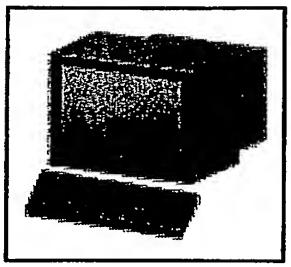
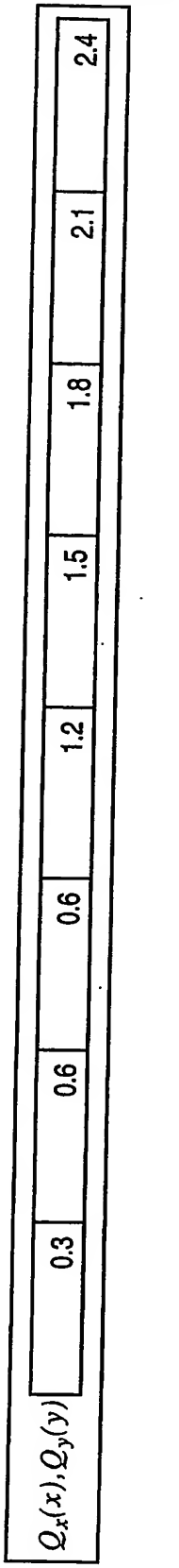
FIG. 29